

A Clinical Study on Down Syndrome and its Management with Ayurveda

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ABSTRACT

Down syndrome is a commonest autosomal chromosomal disorder caused by an error in cell division resulting the presence of an additional third chromosome 21 or trisomy 21. In this condition extra genetic material causes delays in the mental and physical development. An 8-month female child with the symptoms of unable to neck holding, dribbling of saliva, delay in finding of all motor, sensory and social developments was treated at OPD and IPD of GAM Puri with vata shamaka, brumhana and medhya treatment.

After 3 months got demark able results in symptoms like dribbling of saliva, neck holding, sitting with support. Some shaishabiya panchakarma procedures were conducted with the child. Due to many familiar causes with the irregularity of continuation after 6 months the child found remarkable development in fine motor, gross motor, social and language development.

KEYWORDS: *down syndrome, Developmental delay, shaisabiya panchakarma*

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INTRODUCTION

Down syndrome is a commonest autosomal chromosomal disorder caused by an error in cell division resulting the presence of an additional third chromosome 21 or trisomy 21, which is named after a British physician, "John Langdon Down" in 18th century.¹

In this condition extra genetic material causes delays in the mental and physical development.

D.S. is neither a dominant nor recessive trait because it is just an error in the transplanted process of chromosome 21.²

It is one of the most leading causes of intellectual disability and millions of these patients faces many health issues which may include learning disorder, congenital heart diseases, Alzheimer's diseases, leukemia, cancer, memory disorder.³

INCIDENCE

The incidence in India varies from 1 per 800-1200 live birth⁴

RISK FACTORS⁵

Some parents have a greater risk of having a baby with DS

Risk factors include:

Advancing maternal age. A woman's chances of giving birth to a child with DS increase with age because older ages have a greater risk of improper chromosome division. By age 35, a woman's risk of conceiving a child with DS is 1 in 400.

Having one child with Down syndrome. Typically, a woman who has one child with DS has about a 1% chance of having another child with DS

Being carriers of the genetic translocation for DS- Both men and women can pass the genetic translocation for DS on to their children

DIAGNOSIS⁵

- Karyotype Testing- Chromosomal Analysis
- Clinical Diagnosis

COMMON CLINICAL FEATURES⁶

Head and neck

- Brachycephaly
- Up-slanting palpebral fissures
- Epicanthal folds
- Brushfield spots
- Flat nasal bridge
- Folded or dysplastic ears
- Open mouth
- Protruding tongue
- Short and broad neck
- Excessive skin at the nape of neck

Extremities

- Short broad hands
- Short fifth finger
- Incurved fifth finger
- Transverse palmer crease
- Space between first and second toe
- Hyper flexibility of joints
- Poor muscle tone

Other

- Psychomotor retardation

ASSOCIATED PROBLEMS⁴

Congenital heart disease-about 40%

- **Gastrointestinal malformation-** present in about 12%
- **Eye problems-** increased risk of cataract, nystagmus, squint
- **Hearing defect-**40-60% have conductive hearing loss
- **Thyroid disfunction-**13-54% have hypothyroidism
- **Physical growth-**linear growth is retarded & tend to become obese with age
- **Malignancy-** haematological malignancies are more common
- **Immunity & infection-**defects in immunological system, pneumonia & other infections are more common
- **Sexual dev.-** girls can fertile but males are always in fertile
- **Mental retardation -**Almost all DS babies have MR, Mildly to moderately retarded
- IQ declines through the first 10 years of age, reaching a plateau in adolescence that continues into adulthood.

TREATMENT⁷

- There is no cure and It cannot be prevented as Scientists do not know why problems involving chromosome 21 occur.
- Down syndrome is not caused by anything either of the parents did or did not do.
- Early stimulation & monitoring are important components of management

like- speech therapy
occupation therapy
physiotherapy

CASE REPORT

DESCRIPTION OF PATIENT

- An 8th month female child (registration no-21515/2758/8.10.21) from Mayurbhanj, came to Kaumarabharitya & Balaroga OPD of Gopabandhu Ayurveda Mahavidyalaya, Puri on 8th October 2021

CHIEF COMPLAIN

- No neck holding
- Not able to roll over
- No dentition
- No cooing
- Protruding tongue
- Open mouth
- Dribbling of saliva from mouth sometimes

HISTORY OF PRESENT ILLNESS

Suffers from developmental period

BIRTH HISTORY

- **PERI NATAL-** mother age-40, placenta previa, complete bed rest-7th month onwards
- **NATAL-**Term-CS- B.wt-2.7kg,
- **POST NATAL-** neonatal jaundice, SNCU-1day, discharged on 6th day, couldn't sucking breast milk properly till 21 days, expressed breast milk was given

FAMILY HISTORY

no such history found

GENERAL EXAMINATION

- Syndromic face
- Upward slant eye
- Small nose with flat nasal bridge
- Protruding tongue with dribbling saliva
- Appearance- Lethargic
- Space between first and second toe
- Hyper flexibility of joints
- Wt-6 kg
- Ht-62 cm
- P/R- 108/min
- R/R- 24/ min
- Head circum-42cm
- Chest circum-41cm

SYSTEMIC EXAMINATION

- CNS- Conscious, but not oriented about time and place
- Muscle tone- hypo tonic
- Tongue- coated with protuberance
- P/A-soft, no distension
- Bowel- irregular with hard stool

DEVELOPMENTAL HISTORY

- All developmental mile stones are delayed
- Social smile- 4th month
- No neck holding
- Couldn't move head towards sound
- Unable to sit
- Initiation of trying to roll over
- No teeth
- No cooing
- Ant. Fontanel -open
- Post. Fontanel – closed

TREATMENT GIVEN

Medication starts on 8th OCT 2021

Deepana, Pachana, Vata shamaka, Brumhana and Medhya treatment

1. kumara kalyana rasa
2. vata kulantaka rasa
3. Brahmi vati
4. prabala pisti
5. Syp. Hepano
6. Syp. Caldab
7. Syp. Mentat DS

Therapy starts on 3rd DEC 2021 for 15 days, there are 3 sittings of therapy having 15 days each.

- **Abhyanga-** Balaswagandha taila -2 times daily
- **Salisastika annalepa sweda-** for 45 days
- **Matravasti-** Dhanwantara taila + Eranda taila + Saindhava lavana- for 45 days
- **Sirapichu-** Mahanarayana taila- 45 days
- **Swarna Prasanna-** every month

IMPROVEMENT ON 1ST DISCHARGE (20.12.21)

- Neck holding- established
- Able to Rolling on bed
- Move head on sound
- Strength of limbs- increased
- Started Cooing
- Eruption of 2 teeth

IMPROVEMENTS AFTER 3 MONTHS

Cooing, Single syllable

- Sit with support
- Frequency of protrusion of tongue decrease
- Stand with support
- Transfer objects
- Dentition-4 teeth

IMPROVEMENTS AFTER 6 MONTHS

- Creeps up stairs
- Words speaks like dada, mama, baba
- Waves bye bye
- Comes when called
- Walks alone but falls sometime
- Stand without support
- Walk with holding objects

DISCUSSION

In ayurvedic perspective there is no direct comparisons of this disease but it can be understood as **Beejabhagaavayava janya vikara** by **vata dusti**, also due to **Mithyaahara vihara** by mother and **Garbhini Avamanana** as well. When there is lack of proper intelligence, delayed speech, development, these types of diseases can also be categorized under **Samvardhana Vikara**. As vitiation of **vata** is the primary cause so treatment protocol should be **Vatashamaka, Balya, Rasayana, Medhyakara**⁸.

➤ **Kumara Kalyana Rasa**⁹ improves immunity- kumaranam jwara swasa vamanam parigarbhikam grahadoshancha.....

➤ **Vata kulantaka rasa**¹⁰ – vatajan sarba rogascha hanyadachira sevanat....

➤ **Pravala pisti-** best natural calcium

➤ **Brahmi vati** – ...Mastiskasya hrudayscapi dourbalyam¹¹

➤ **Bala-** sangrahika balya vataharanam, **Ashwagandha-** balya, **Pushti, vataghni, rasayana & Eranda-** brushya vataharanam¹²

➤ **Dhanwantara taila-** Sutika Bala marma asthi khsata kheenesu pujitam¹³

➤ **Mahanarayana taila-** can use in all types of therapy both externally and internally in **sakhasrita & kosthagata vata**, any **vata vikara** like **panguta, ardita, manyahanusthambha..**¹⁴

➤ **Sirapichu-** Balam sirah kapalanam vishesana avivardhate.....indriyani prasidanti.¹⁵The oil therapy of shirodhara strengthens the mind, building ojas to contain the prana and tejas⁸.

➤ **Abhyanga-** mardabakara kaphavata nirodhana dhatunam pustijanana urja barna balapradah.¹⁶(su) **Swedana** helps in **Agni Deepthi, Twak prasadana, Bhaktashradha** and **Srothonirmal.**¹⁸

➤ **Salisastikapindasweda** mentioned in Charaka Samhita for mainly **vata vikara.**²⁰ The combination of abhyanga, shirodhara, and swedana is known as bliss therapy⁸.**Matravasti-** specifically indicated in **Bala & Sukumara** & it is **balyam sukhopchayam..... brimhanam vataroganut**¹.

➤ **Subarna Prasanna** –..... **Medha Agni Bala bardhanam Ayushya Mangalam punyam Brushyam barnyam Grahapaham**¹⁹

With these treatments, along with many familiar causes with the irregularity of continuation of the patient, after 6 months the child found remarkable

development in **fine motor, gross motor, social and language development.**

CONCLUSION

- In today's era due to late marriage, age of conceive also increasing day by day, which leads to risk factor of down syndrome .
- This case reveals ayurvedic treatment has positive effect on both physical and mental development
- Since root cause of this disease can't be treated but by the Ayurvedic treatment procedures we can improve the quality & standard of life physically, mentally and socially.
- This may be needed further more research.

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